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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/728,407	12/01/2000	Kenneth G. Ricks	MFS-31524-1	1523

30698 7590 11/17/2006

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EXAMINER	
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ART UNIT	**PAPER NUMBER**
2123	

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/728,407
Filing Date: December 01, 2000
Appellant(s): RICKS ET AL.

James McGroary Reg. #38,960
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/20/2006 appealing from the Office action mailed 07/27/2005.

(1) Real Party in Interest

A Statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

- Wells et al. ("Parallel Simulation of a Large Aerospace System Multicomputer Environment" (1997)),
- DOME Guide (Honeywell Software 1998)

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 3-13 and 15-25 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Wells et al. ("Parallel Simulation of a Large Aerospace System Multicomputer Environment" (1997) hereafter Wells), in view of DOME Guide (Honeywell Software 1998).

Wells teaches parallel simulation of hardware platforms within a test-bed aerospace system of multiprocessors in real-time; but doesn't expressly teach arcs between nodes.

DOME (Domain Modeling Environment) teaches a tool-set which is extensible collection of integrated model-editing, metamodeling and analysis tools supporting a model-based development approach to system/software engineering (pg.2, first paragraph), which also includes simulation (pg. 4, line 9); and arcs between nodes (DOME: pg. 65, figure 28).

Both pieces of art are analogous since they teach simulation.

Therefore at the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize the software application of DOME in the space simulation algorithm of Wells because DOME teaches a method to assist

product developers describe the product or system being developed using formal modeling techniques and develop model analysis mechanisms that enhance model understanding (Dome: pg. 2, Model-based Development section, bullets 2 and 3, respectively).

Claim 1: A system for enabling a user to create on a computer workstation (well known within the art of simulation) a visually displayed architectural description of a computer simulation (Wells: pg. 507, lines 11-17) of a real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") comprising:

a. a standardized set of graphical node elements (DOME: pg. 12) representing each of a plurality of pre-defined real system components (Wells: pg. 508, right column, lines 21-22), the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") components including processes and real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") hardware associated with the real system (Wells: pg. 508, right column, lines 21-22); wherein the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") components represented bye the standard set of node elements (Dome: pg.12) include external hardware devices, periodic process, aperiodic process and continuous process (Wells: pg. 514, left column, Task Allocation, lines 14-3).

b. a standardized set of graphical arc elements (Wells: pg. 519, table I, base topology; Note: specification defines arc elements as "real system functional relationships" pg. 21, lines 19-20) representing each of a plurality of pre-defined timing (Wells: pg. 509, right column, 1st paragraph, lines 4-6) (Wells: pg. 510, left column, lines 3-9 and 37-39) control, and data relationships that can be associated with the pre-defined real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") components (Dome: pg. 6, Domain Specific Notations);

c. each of the graphical node elements (Note: specification defines arc elements as "real system functional relationships" pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence) and arc elements (Wells: pg.519, Table I, Base Topology) displayed at a graphical user interface (DOME: pg.55, line 1) on the workstation (well known within the art of computers) and selectable by the user whereby the user can position selected node elements (Dome: pg.12) in a user-defined arrangement and connect two or more of the selected node elements (DOME: pg. 12) with one or more selected arc elements (Wells: pg. 519, table I, base topology) to create on the workstation (well known within the art of computers) the architectural description (DOME: pg.6, bullet 14) of the simulation of the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine");

d. a parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)input window associated with at least some of the selected node (DOME: pg. A-8, Parameters) and arc elements, the parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)input window allowing the user to associate parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)with the selected node (DOME: pg. 12) and arc elements; and simulation architecture data files describing: the selected node and arc elements, the user defined arrangement of the node (DOME: pg. 14) and arc elements (Wells: pg. 519, table I, base topology), and the parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)input by the user.

Claim 3: The system of claim 2 wherein the standardized set of node elements (DOME: pg. 14) further includes at least one simulation (Wells: pg. 509, lines 17-28) container representing in a single graphical node element (Wells: pg. 519, table I, base topology) a plurality of the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., “main rocket engine”) components.

Claim 4: The system of claim 3 (Wells: pg. 509, lines 17-28) wherein the standardized set of node elements (Dome: pg.12) further includes a boundary node (DOME: pg. 14, Instruction 11).

Claim 5: A system for enabling a user to create on a computer workstation (well known within the art of simulation) a visually displayed architectural description of a computer simulation of a real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") comprising:

a. a standardized set of graphical node elements (Note: specification defines arc elements as "real system functional relationships" pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence) representing each of a plurality of pre-defined real system components (Wells: pg.508, right column lines 13-17) the real-system components including processes and real-system hardware associated with real-system (Dome: pg. 6, Domain Specific Notations);

b. a standardized set of graphical arc elements (Note: specification defines arc elements as "real system functional relationships" pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence) representing each of a plurality of pre-defined timing (Wells: pg. 509, right column, 1st paragraph, lines 4-6), control, and data relationships that can be associated with the pre-defined timing (Wells: pg. 509, right column, 1st paragraph, lines 4-6) real-system components wherein the pre-defined timing (Wells: pg. 509, right column, 1st paragraph, lines 4-6) (Wells: pg. 509, right column, 1st paragraph) control, and data relationships represented by the standard set of graphical arc elements (Note: specification defines arc elements as "real system functional relationships"

pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence) include data transfer between process, synchronization between processes (Wells: pg. 512, left column, 4th paragraph "parallel execution") and synchronization with data transfer between processes;

c. each of the graphical node elements (Dome: pg.12) and arc elements (Note: specification defines arc elements as "real system functional relationships" pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence) displayed at the graphical user interface (DOME: pg.55, line 1) on the workstation (well known within the art of computers) and selectable by the user whereby the user can position selected mode elements in a user-defined arrangement and connect two or more of the selected node elements (Dome: pg.12) with one or more selected arc elements to create (Dome: pg. 12 and D-24) on the workstation (well known within the art of computers) the architectural description of the simulation of the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine");

d. a parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)input window associated (Note: specification defines arc elements as "real system functional relationships" pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence) with at least some of the selected node and arc elements, (Dome: pg.9) the parameter data (Wells: pg. 507-508, lines 20-26

and 1-5 respectively, examples)input window allowing the user to link parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)with the selected node and arc elements (Note: specification defines arc elements as "real system functional relationships" pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence); and

e. simulation architecture data files (Dome: pgs 24-25) describing the selected node and arc elements, the user defined arrangement of the node (Note: specification defines arc elements as "real system functional relationships" pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence) and arc elements, and the parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)input by the user.

Claim 6: The system of claim 5 wherein the standardized set of graphical (DOME: pg.12) arc elements (Wells: pg. 519, table 1, base topology) further includes a communications container (DOME: pg. 41, Element Tools, line 5) representing in a single graphical arc element a plurality of the timing, control, and data relationships.

Claim 7: The system of claim 5 wherein the synchronization relationship (Wells: pg.514, left column, Task Allocation, lines 14-23) represented by one of the arc elements defines a synchronization (Wells: pg. 514, left column, Task Allocation,

lines 14-23) mechanism between a first node element representing a source process and a second node element representing a destination process (DOME: pg. A-4, figure 31) and the parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)that can be linked to the arc elements (Wells: pg.519, Table I, Base Topology) representing a synchronization mechanism includes a sync release time relative to execution time of the source process and a sync frequency.

Claim 8: The system of claim 7 wherein the source and destination processes (DOME: pg. A-4, figure 31) connected by an arc element representing a synchronization (Wells: pg. 514, left column, Task Allocation, lines 14-23) mechanism can each be periodic, aperiodic, or continuous (Wells: pg. 514, left column, Task Allocation, lines 14-3).

Claim 9: The system of claim 8 wherein the synchronization (Wells: pg. 514, left column, Task Allocation, lines 14-23) mechanisms associated with an arc element selected by the user are tested for selection of an illegal synchronization relationship (Wells: left column, lines 12-19) between node elements (Dome: pg.12) selected by the user.

Claim 10: The system of claim 9 wherein the illegal synchronization relationships (Wells: left column, lines 12-19) tested by the; system include:

a. connecting a periodic; source process to a periodic destination (DOME: pg. A-4, figure 31) process with an arc element representing an aperiodic synchronization mechanism (Wells: pg. 514, left column, Task Allocation, lines 14-3);

b. connecting an aperiodic source process to a periodic destination process with an arc element representing a synchronization mechanism (Wells: pg. 514, left column, Task Allocation, lines 14-3); and

c. connecting to a single process (DOME: pg. 50, figure 22) with multiple arc elements (Wells: pg. 519, table 1, base topology) defining different synchronization mechanisms.

Claim 11: The system of claim 1 further comprising an output file generator operable to select and organize pre-defined portions (DOME: pg. 37, Document Generator) of the simulation architecture (Wells: pg. 519, table 1, base topology) data files into an electronic output file (well known function in computers)that can be used for generating computer code (DOME: pg. A-14) defining a computer simulation corresponding to the architectural description created by the user on the workstation (well known within the art of computers).

Claim 12: A method of creating on a computer workstation (well known within the art of simulation) a graphical description of the architecture of a simulation of

a real world system (Wells: pg. 511, left column, 1st paragraph) comprising the steps of:

a. selecting at a graphical user interface (DOME: pg.55, line 1) one or more graphical node elements (Dome: pg.12) from a standardized set of graphical node elements (Dome: pg.12) displayed on the workstation (well known within the art of computers), the selected node elements (Wells: pg. 514, left column, lines 8-12) representing pre-defined real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") components, including processes and real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") hardware (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine"), associated with the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine"); wherein the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") components represented by the standardized set to node elements (Wells: pg. 519, table I, base topology) include external hardware devices, periodic processes, aperiodic processes and continuous processes (Wells: pg. 514, left column, Task Allocation, lines 14-3);

b. selecting at the graphical user interface (DOME: pg.55, line 1) one or more graphical arc elements (Wells: pg.519, Table I, Base Topology) from a standardized set of graphical arc elements (Wells: pg.519, Table I, Base Topology) displayed on the workstation (well known within the art of computers) (DOME: pg. 55), the selected arc elements (Wells: pg.519, Table I, Base Topology) representing pre-defined timing (Wells: pg. 509, right column, 1st

paragraph, lines 4-6), control, and data relationships between the selected node elements (Wells: pg. 514, left column, lines 8-12);

c. arranging on the graphical user interface (DOME: pg.55, line 1) the selected node elements (Wells: pg. 514, left column, lines 8-12) and connecting the selected node elements (Dome: pg.12) with the selected arc elements (Wells: pg.519, Table I, Base Topology) to create and display on the workstation (well known within the art of computers) (DOME: pg. 55) the architectural description of the simulation of the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine");

d. entering at one or more parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)input windows (DOME: pg.57, Window Option) associated with at least some of the selected node (Wells: pg. 514, left column, lines 8-12) and arc elements (Wells: pg.519, Table I, Base Topology) parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)that further defines properties of the selected node and arc elements (Wells: pg.519, Table I, Base Topology) found in the real world system (Wells: pg. 510,. Left column, 2nd paragraph, line 1); and

e. saving, in one or more simulation architecture data files (DOME: pg.68, Saving and Printing), data about the selected node and arc elements, data about the user-defined arrangement of the node (Wells: pg. 514, left column, lines 8-12)

and arc elements, and the parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)input by the user.

Claim 13: The method of claim 12 further comprising the step of generating an output file containing selected portions of the simulation architecture data files (Wells: pg. 514, left column, lines 8-34; and DOME pg. 37, Document Generator).

Claim 15: The method of claim 13 wherein the standardized set of node elements (Wells: pg. 514, left column, lines 8-12) further includes at least one simulation container (DOME: pg. 41, Element Tools) representing in a single node element a plurality of the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") components.

Claim 16: The method of claim 15 wherein the standardized set of node elements (Wells: pg. 514, left column, lines 8-12) further includes a boundary node (DOME: pg. 14, Instruction 11)..

Claim 17: A method of creating on a computer workstation (well known within the art of simulation) a graphical description of the architecture (Dome: pg.9-12) of a simulation of a real-world system (Wells: pg. 508, right column, lines 5-22) comprising the steps of:

a. selecting at a graphical user interface (DOME: pg.55, line 1) one or more graphical node elements (Dome: pg.12) from a standardized set of graphical node elements (Dome: pg.12) displayed on the workstation (well known within the art of computers), the selected node elements(Dome: pg.12) representing pre-defined real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") components, including processes and real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine") hardware associated with the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., "main rocket engine");

b. selecting at the graphical user interface (DOME: pg.55, line 1) on or more graphical arc elements (Wells: pg.519, Table I, Base Topology) from a standardized set of graphical arc elements (Note: specification defines arc elements as "real system functional relationships" pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence) displayed on the workstation (well known within the art of computers) the selected arc elements (Wells: pg.519, Table I, Base Topology) representing pre-defined timing (Wells: pg. 509, right column, 1st paragraph, lines 4-6), control, and data relationships between the selected node elements (Dome: pg.12) wherein the pre-defined timing (Wells: pg. 509, right column, 1st paragraph, lines 4-6), control and data relationships represented by the standardized set of arc elements (Wells: pg.519, Table I, Base Topology) include data transfer between processes, synchronization

between processes (Wells: pg. 514, section VI Task Allocation, left column, lines 14-23), and synchronization with data transfer between process;

c. arranging on the graphical user interface (DOME: pg.55, line 1) the selected node elements (Dome: pg.12) and connecting the selected node elements (Dome: pg.12) with the selected arc elements (Note: specification defines arc elements as “real system functional relationships” pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence) to create and display on the workstation (well known within the art of computers) the architectural description of the simulation of the real system (Wells: pg. 511, left column, 1st paragraph);

d. entering at one or more parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)input windows associated with at least some of the selected (Dome: pgs 9-20; Note: specification defines arc elements as “real system functional relationships” pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence) node and arc parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)that further defines properties of the selected node and arc elements (Wells: pg.519, Table I, Base Topology) found in the real world system (Wells: pg. 511, left column, 1st paragraph); and

e. saving in one or more simulation architecture data files (Dome: pgs 9-23; Note: specification defines arc elements as "real system functional relationships" pg. 21, lines 19-20—Wells: pg. 508, right column 2nd paragraph, 1st sentence) about the selected node and arc elements (Wells: pg.519, Table I, Base Topology) data about the user defined arrangement of the node and arc elements (Wells: pg.519, Table I, Base Topology) and the parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)input by the user.

Claim 18: The method of claim 17 (DOME: pg.55, line 1and pg.12; and Wells: pg. 519, table 1, base topology) wherein the standardized set of arc elements (Wells: pg.519, Table I, Base Topology) further includes a communications container (DOME: pg.41, Element Tools) representing in a single arc element a plurality of the timing, control, and data relationships (Wells: pg. 514, left column, lines 8-12).

Claim 19: The method of claim 17 wherein the synchronization relationship (Wells: pg. 514, left column, Task Allocation, lines 14-23) represented by one of the arc elements (Wells: pg.519, Table I, Base Topology) defines a synchronization mechanism between a first node element representing a source process and a second node element representing a destination process (DOME: pg. A-4, figure 31), and the parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)that can be associated with the arc elements (Wells:

pg.519, Table I, Base Topology) representing a synchronization mechanism includes a sync release time relative to an execution time of the source process and a sync frequency (Wells: pg. 512, 3rd paragraph, lines 1-19 and pg. 518, right column, lines 1-3).

Claim 20: The method of claim 19 wherein the source and destination processes (DOME: pg. A-4, figure 31) connected by an arc element representing a synchronization mechanism can each be periodic, aperiodic, or continuous (Wells: pg. 514, left column, Task Allocation, lines 14-23).

Claim 21: The method of claim 20 further comprising automatically testing the synchronization mechanisms (Wells: pg. 512, left column, 3rd paragraph, lines 1-19) associated with selected arc elements (Wells: pg.519, Table I, Base Topology) for use of an illegal synchronization relationship between selected node elements.

Claim 22:The method of claim 21 wherein the illegal synchronization relationships (Wells: left column, 3rd paragraph, lines 12-19) tested include: a connecting a periodic source process to a periodic destination process (DOME: pg. A-4, figure 31) with an arc synchronization mechanism;

b. connecting an aperiodic source process to a periodic destination process (DOME: pg. A-4, figure 31) with an arc element representing a synchronization mechanism (Wells: pg. 518, left column, lines11-22); and

c. connecting to a single process with multiple arc elements (Wells: pg.519, Table I, Base Topology) defining different synchronization mechanisms.

Claim 23: The method of claim 13 further comprising organizing data in the output file (DOME: pg. 37, Document Generator; and Wells: pg. 514, left column, lines 8-34) for use in generating computer code defining a computer simulation corresponding to the architectural description created by the user on the workstation (well known within the art of computers).

Claim 24: A system for creating a graphical representation of the architecture of a computer simulation of a real world system comprising (Wells: pg. 508, right column, lines 5-13):

a. a computer workstation (well known within the art of simulation) having a processor, display, keyboard, an operating system causing the processor (Wells: pg. 514, lines 8-12) to generate a cursor on the display, a pointing device for manipulating the cursor on the display (DOME: D-16), and a data storage device;

b. a first software module (DOME: pg. A-14, lines 26-27) generable to generate a graphical user interface (DOME: pg.55, line 1) on the display;

c. a second software module operable to display on the graphical user interface (DOME: pg.55, line 1) a pre-defined set of graphical node elements (Wells: pg. 514, left column, lines 8-12), the node elements (Dome: pg.12) representing pre-defined (Wells: pg. 514, Task Allocation) real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., “main rocket engine”) components, the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., “main rocket engine”) components including processes and real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., “main rocket engine”) hardware associated with the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., “main rocket engine”), wherein the real system (Wells: pg. 507, 2nd paragraph, lines 3-4 e.g., “main rocket engine”) components represented by the standardized set of node elements (Dome: pg.12) include external hardware devices, periodic process; aperiodic process (Wells: pg. 509, right column, lines 4-14)and continuous processes.

d. a third software module operable to display on the graphical user interface (DOME: pg.55, line 1) a pre-defined set of graphical arc elements (Wells: pg.519, Table I, Base Topology), the arc elements representing pre-defined timing (Wells: pg. 509, right column, 1st paragraph, lines 4-6), control, and data relationships that can be associated with the real system (Wells: pg. 507, 2nd

paragraph, lines 3-4 e.g., "main rocket engine") components, wherein the pre-defined timing (Wells: pg. 509, right column, 1st paragraph, lines 4-6), control and data relationships represented by the standardized set of arc elements (Wells: pg.519, Table I, Base Topology) include data transfer between process, synchronization between process, and synchronization with data transfer between process;

e. the second software module further operable to allow the user, using the pointing device (DOME: D-16), to select one or more of the node elements (Dome: pg.12) and position the selected node elements(Dome: pg.12) in a user-defined (DOME: pg. 6, line 15) arrangement on the display corresponding to the simulation architecture;

f. the third software module further operable to allow the user, using the pointing device (DOME: D-16), to select one or more of the arc elements (Wells: pg.519, Table I, Base Topology) and position the selected arc elements (Wells: pg.519, Table I, Base Topology)on the display to connect the selected and positioned node elements (Dome: pg.12) so as to associate one of the pre-defined timing (Wells: pg. 509, right column, 1st paragraph, lines 4-6) (Wells: pg. 510, left column lines 37-39), control, and data relationships with the node elements (Dome: pg.12) connected by the selected arc elements;

g. a fourth software module operable, in conjunction with the graphical user interface, to open parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)input windows (DOME: pg. 9, figure 2) linked to one or more of the selected node (DOME: pg. 12) and arc elements (Wells: pg.519, Table I, Base Topology), and receive from the user parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)further defining properties (DOME: pg. 45) of the linked node and arc elements; and

h. the operating system further operable to store on the data storage device (Dome: pg. 23) simulation architecture data files containing data representing: the selected node and arc elements (Wells: pg.519, Table I, Base Topology), the arrangement of the selected node elements, the connection of the selected node elements(Dome: pg.12) by the selected arc elements, and the parameter data (Wells: pg. 507-508, lines 20-26 and 1-5 respectively, examples)input by the user (DOME: pgs 45, 53 and 65 (figure 28)).

Claim 25: The system of claim 24 further comprising an output file generator module (DOME: pg. 37, document generator) operable to select and organize pre-defined portions of the simulation architecture data files into an electronic output file (well known function in computers)that can be used for generating computer code (DOME)that defines a computer simulation (Wells: pg. 514, left

column, lines 8-34) corresponding to the architectural description created by the user on the workstation (well known within the art of computers).

(10) Response to Argument

<u>*Neither Wells nor DOME Disclose "graphical arc elements."*</u>

Appellants state the amended claims 1,3-13 and 15-25 require 'graphical arc elements" to which Wells depicts. Specifically, on page 519 of Wells, table 1 clearly denotes two circles 2 and 4 that are linked together by a straight line. These illustrations are nothing more than arc segments or curved lines of a circle, illustrated graphically in a table.

The Office made a correlation between real-system and arc elements in the Well's reference based on the definition within the specification (page 21, lines 19-20): "real-system functional relationship representations (arc elements)". Specifically, on page 516, figure 9, Wells illustrates these arc elements as the Automated Partitioning and Mapping Engine (APME) software, which implement the parallel configuration (i.e., an algorithm). Reading the particulars of these events based on figure 9 (page 516, right column, 2nd paragraph) the APME performs embedding events between the Transputer and nonbase Transputer, which are illustrated by graphic arc elements (Figure 9). These events are directly related to the Space Shuttle Main Rocket Engine (SSME) as stated in the last

four lines of page 516, right column, 2nd paragraph which denotes that the SSME requires real time conditions. Therefore, if the SSME requires real time operations, then the graphical arcs representing the AMPE must require real-time operations which refers back to the graphical elements requiring real-time operations as defined by page 21, lines 19-20 of the specification.

Furthermore, using Dome graphical arc elements illustrated on page 14 i.e., “Process A to Process B”, it would have been obvious to one of ordinary skill in the art to manipulate the software application of DOME coupled with APME of Wells to utilize SSME data to mimic real-time events.

Neither Well nor Dome disclose “periodic processes, aperiodic processes and continuous process

Appellants argue that non-buffered communication is not disclosed in either reference; however, this limitation, verbatim, is not claimed.

There’s no motivation to combine Wells and Dome

In response to Appellants’ argument that this reasoning simply recites the benefits described in the secondary reference DOME without an explanation as to how Wells and DOME can be combined to "make the claimed combination" as required by In re Fine or where a reasonable expectation of success of such a

combination is established, as required by In re Fine., the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

As far as impermissible hindsight, it's not impermissible hindsight if the motivation to combine stems from the prior art. Conversely, DOME teaches a software development tool depicting graphic arc elements but fails to teach periodic, aperiodic simulation in real-time that is taught by Wells.

Both pieces of art are analogous since they both teach graphical simulation.

Therefore, it would have been obvious to one ordinary skill in the art at the time of invention to utilize the parallel simulation of Wells in the graphical software of DOME because Wells teaches methods in which software tools can be created for such multicomputing environments which create complete parallel implementations in a seamless manner while allowing large amounts of flexibility (Wells: pg. 520, "Conclusions" section, lines 5-10).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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November 8, 2006